Claims:

1. A method of determining interference between channels in a Digital Subscriber Line (DSL) transmission system employing Discrete Multitone (DMT) modulation comprising:
determining a power mask level per channel P(k);
obtaining a channel impulse value h(n) after implementation of a time equalization (TEQ) algorithm; and
multiplying the per channel power mask level and a residual impulse spectrum to obtain a cross channel interference (I(k)) level.

2. The method according to claim 1 wherein a Fast Fourier Transform (FFT) is employed to obtain said residual impulse spectrum.

3. A method of estimating cross channel interference I(k) in a Discrete Multitone (DMT) communication system implemented in a Digital Subscriber Line (DSL) application, said DMT system employing inter-symbol cyclic prefix (M) and Time Equalization (TEQ), the method comprising:
a) measuring a total channel impulse response h(n) after TEQ;
b) zeroing M main coefficients from h(n);
c) performing Fast Fourier Transform (FFT) analysis on the result of step b); and
d) obtaining I(k) by multiplying the result of step c) with a maximum power per channel value.

4. A method of allocating bits per channel in a DMT communication system implemented in a DSL application, said system employing inter-symbol cyclic prefix and Time Equalization, said method comprising;
performing a first bit allocation algorithm to obtain a first bit per channel value and a first power per channel level;

obtaining a cross channel interference value based on a measured impulse response;
obtaining a noise value by adding the cross channel interference value to an interference noise value;
obtaining a second power mask per channel based on a pre-calculated power per channel level ; and
implementing a second bit allocation algorithm utilizing said noise value, a signal to noise ratio and said second power mask per channel level to obtain a final bit per channel allocation.

5. The method according to claim 5 wherein a second power per channel level is derived by said second bit allocation algorithm.

6. A system for determining interference between channels in a Digital Subscriber Line (DSL) transmission system employing Discrete Multitone (DMT) modulation comprising:
means to determine a power mask level per channel P(k);
means to obtain a channel impulse value h(n) after implementation of a time equalization (TEQ) algorithm; and
a multiplier to multiply the per channel power mask level and a residual impulse spectrum to obtain a cross channel interference (I(k)) level.

7. A system for estimating cross channel interference I(k) in a Discrete Multitone (DMT) communication system implemented in a Digital Subscriber Line (DSL) application, said DMT system employing inter-symbol cyclic prefix (M) and Time Equalization (TEQ), the system comprising:
a) measurement means to measure a total channel impulse response h(n) after TEQ;
b) means to zero M main coefficients from h(n);
c) means to perform Fast Fourier Transform (FFT) analysis on the result of step b); and
d) means to obtain I(k) by multiplying the result of step c) with a maximum power per channel value.

8. A system for allocating bits per channel in a DMT communication scheme implemented in a DSL application employing inter-symbol cyclic prefix and Time Equalization, said system comprising;

means for performing a first bit allocation algorithm to obtain a first bit per channel value and a first power per channel level;

means for obtaining a cross channel interference value based on a measured impulse response;

means for obtaining a noise value by adding the cross channel interference value to an interference noise value;

means for obtaining a second power mask per channel based on a pre-calculated power per channel level ; and

means for implementing a second bit allocation algorithm utilizing said noise value, a signal to noise ratio and said second power mask per channel level to obtain a final bit per channel allocation.